

ABSTRACT

In a transfer apparatus to which MIMO-OFDM is applied, a data transmission method and a data reception method are provided in which, even when there are frequency errors varying among transfer paths, the precision of estimation of an inverse propagation coefficient function can be improved, thereby making it possible to suppress a degradation in characteristics. Among symbols composed of a plurality of subcarriers orthogonal to each other, the transfer apparatus uses, as a synchronization symbol, a symbol in which predetermined amplitudes and phases are assigned to a plurality of subcarriers spaced at predetermined frequency intervals. The synchronization symbol is divided into transmission antennas to generate a plurality of synchronization subsymbols, which are in turn simultaneously transmitted from a plurality of transmission antennas. A reception apparatus estimates a frequency error for each transfer path based on synchronization subsymbols included in signals received by a plurality of reception antennas, and based on the estimated frequency errors, corrects the received signals.